

Title (en)

A method of detaching a monolith from rock massif and a device for application of the method

Title (de)

Verfahren zur Ablösung eines Monolithen aus einem Felsenmassiv und Vorrichtung zur Anwendung des Verfahrens

Title (fr)

Procédé de détachement de monolithe d'un massif rocheux et dispositif pour l'application de ce procédé

Publication

EP 2660555 B1 20160217 (EN)

Application

EP 13460026 A 20130502

Priority

PL 39909712 A 20120504

Abstract (en)

[origin: EP2660555A2] A method of detaching a monolith from rock massif, consisting in that, depending on length and volume of the monolith (1) to be detached from rock massif (2) or concrete block (1) to be split, shot holes (3) are drilled in such massif or block with identical diameter $d = 25\text{--}75$ mm, identical distance between holes $c = 10\text{--}25$ cm, identical distance $e = 10\text{--}15$ cm of the outermost holes (4) from the edges (5 and 6) of the main massif (2) and identical distance $k = 10\text{--}20$ cm from lower plane (7) of the monolith (1) to be detached. Next, depending on the diameter (d) and number of holes (3), prepared is the same number of identical gas-generating devices (8) having casings, made preferably of polyethylene, adapted to diameter and height of the holes and equipped with initiating device (11) provided with pyrotechnic igniter (16) equipped with electric wires (17) that is surrounded with binary mixture (12) containing 88-105 parts by weight of sodium chlorate (NaClO_3) and 0.8-1.5 parts by weight of iron oxide, functioning as a catalyst of burning. Further, 7.8-13.5 parts by weight of fuel oil (19) for diesel engines is injected into the mixture by means of any commonly known method and the so prepared and tightly closed gas-generating devices (8') are placed, depending on height (H) of the shot holes (3), in at least one row on bottoms of the holes in such a way that their electric wires (17) protrude above the surface of the monolith to be detached, and further the commonly known operations are performed related to sealing the holes by means of clay, sand, or their mixture and igniting said ternary mixture initiated by initiating devices (11) and generating heat and gas with pressure amounting to 95-105 MPa resulting in detachment of monolith (1) from rock massif (2) or avalanche massif or splitting a concrete block (1).

IPC 8 full level

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CPC (source: EP)

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Cited by

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